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DOCKET NO.: MS302099.1/MSFTP435US

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re patent application of

Applicant: **Hagai Attias, et al.**  
Serial No.: **10/600,798**  
Filed: **06/20/03**  
For: **VARIATIONAL INFERENCE AND LEARNING FOR SEGMENTAL SWITCHING STATE SPACE MODELS OF HIDDEN SPEECH DYNAMICS**  
Art Unit: **2641**  
Examiner: **Unknown**

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

1. Pursuant to 37 C.F.R. §1.97 and §1.98, and in compliance with 37 C.F.R. §1.56, the Office's attention is directed to the patents, publications and other information listed on the attached PTO-1449. A copy of each listed document is enclosed except for: (a) pending applications; (b) those previously cited or submitted to the Office in the following application(s) upon which this application relies for an earlier filing date under 35 U.S.C. §120; and/or (c) U.S. Patent(s) and published applications(s).

Serial No.: \_\_\_\_\_  
Filing Date: \_\_\_\_\_

Regarding any document, publication or other information for which a date is not given on the attached PTO-1449, Applicant(s) believe(s) the same may qualify as "prior" art to this application and should be treated accordingly, although Applicant(s) reserve(s) the right to contest the prior art status of any document, publication or information, should issue arise.

2. Regarding each listed document that is not in the English language, an English-language translation accompanies this Statement as indicated on the attached PTO-1449 or a concise explanation of the relevance of the document is set forth in the following document(s):

- (a) ☐ Copy of each English language version of a search report indicating the degree of relevance found by the foreign office of each document being submitted from the search report.
- (b) ☐ Attachment entitled "Concise Explanation of Relevance of Non-English Language Documents".

3. Pursuant to 37 C.F.R. §1.97(b) this Statement is being filed (one must be checked):

- (a) ☐ Within 3 months of the filing date or date of entry into the National Stage.
- (b) ☒ Before the mailing date of a first Office Action on the merits. If this Statement is not filed before the mailing date of a first Office Action on the merits, the required certification is given below or, in the absence thereof, the Office is authorized to charge the required fee set forth in 37 C.F.R. §1.17(p) to Deposit Account No. 50-1063 for consideration of this Statement.
- (c) ☐ Before the mailing date of an Office Action after the filing of a request for continued examination under 1.114.

- (d) ☐ After the period set forth in 37 C.F.R. §1.97(b) but before the mailing date of either a final action or a notice of allowance.
- (1) ☐ The required certification is given below, or
- (2) ☐ Regarding the fee set forth in 37 C.F.R. §1.17(p) for consideration of this Statement :
- (i) ☐ Enclosed is a check covering the fee;
- (ii) ☐ Charge the fee set forth in 37 C.F.R. §1.17(p) to Deposit Account No. 50-1063; or
- (iii) ☐ Enclosed is a credit card payment form covering the fee.
- (e) ☐ After the mailing date of either a final action or a notice of allowance, but before payment of the issue fee. Petition hereby is made for consideration of this Statement and the required certification is indicated below. Regarding the fee set forth in 37 C.F.R. §1.17(i)(1) for consideration of this Statement:
- (1) ☐ Enclosed is a check covering the fee;
- (2) ☐ Charge the fee set forth in 37 C.F.R. §1.17(i)(1) to Deposit Account No. 50-1063; or
- (3) ☐ Enclosed is a credit card payment form covering the fee.

4. Certification (if applicable)

- (a) ☐ The undersigned hereby certifies that each item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than 3 months prior to the filing of this Statement.
- (b) ☐ The undersigned hereby certifies that no item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the undersigned's knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. §1.56(c) more than 3 months prior to the filing of this Statement.

5. The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No. 50-1063.

Respectfully Submitted,

By




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CERTIFICATE OF MAILING

I hereby certify that this correspondence (along with any paper referenced as being attached or enclosed) is being deposited on the below date with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

10-20-05  
Date

  
Himanshu S. Amin



PTO/SB/08b (08-03)  
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<b>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	10/600,798
				Filing Date	06/20/03
				First Named Inventor	Hagai Attias
				Art Unit	2641
				Examiner Name	Unknown
Sheet	1	of	1	Attorney Docket Number	MS302099.1/MSFTP435US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		M. OSTENDORF, V. V. DIGALAKIS, and O. A. KIMBALL, From HMMs to Segment Models: A Unified View of Stochastic Modeling for Speech Recognition, IEEE Trans. Speech Audio Process, Vol. 4, No. 5, 1996. pp. 360 - 378	
		Z. GHABRAMANI and G. E. HINTON, Variational Learning for Switching State-Space Models, Submitted to Neural Computation, Vol. 12, 2000. pp. 831 - 864	
		H. B. RICHARDS and J. S. BRIDLE, The HDM: A Segmental Hidden Dynamic Model of Coarticulation, Proc. ICASSP, Phoenix, 1999, pp. 357 - 360	
		K. REINHARD and M. NIRANJAN, Diphone subspace mixture trajectory models for HMM complementation, Speech Communications, Vol. 38, 2002, pp. 237 - 265	
		V. PAVLOVIC, B. J. FREY and T. S. HUANG, Variational Learning in Mixed-State Dynamic Graphical Models, in Proc. UAI, Stockholm, 1999, pp. 522 - 530	
		L. J. LEE, P. FIEGUTH and L. DENG, A Functional Articulatory Dynamic Model for Speech Production, in Proc. ICASSP, Salt Lake City, 2001, pp. 797 - 800	
		J. Z. MA and L. DENG, A path stacked algorithm for optimizing dynamic regimes in a statistical hidden dynamic model of speech, Computer, Speech and Languages, Vol. 14, 2000, pp.101 - 114	
		L. DENG and J. MA, Spontaneous speech recognition using a statistical coarticulatory model for the vocal-tract-resonance dynamics, J. Acous. Soc. Am., Vol. 108, No. 6, 2000, pp. 3036 - 3048	

Examiner Signature		Date Considered	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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